

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**UTILITY APPLICATION AND FEE TRANSMITTAL (1.53(b))**

ASSISTANT COMMISSIONER FOR PATENTS  
**BOX PATENT APPLICATION**  
Washington, D.C. 20231

Sir:

Transmitted herewith for filing is the patent application of

Inventor(s) names and addresses:

- (1) Akihito MOCHIZUKI  
Narashino-shi, JAPAN

☐ Additional inventors are listed on a separate sheet

For: DATA COMMUNICATION APPARATUS AND METHOD

Enclosed Are:

24 page(s) of specification  
1 page(s) of Abstract  
7 page(s) of claims  
5 sheets of ☒ Formal ☐ Informal drawings

6 page(s) of Declaration and Power of Attorney

- ☐ Unsigned  
☐ Newly Executed  
☒ Copy from prior application  
☐ Deletion of inventors including Signed Statement under 37 C.F.R. §1.63(d)(2)

☒ **Incorporation by Reference:**

- ☒ The entire disclosure of the prior application, from which a copy of the combined Declaration and Power of Attorney is supplied herein, is considered as being part of the disclosure of the accompanying application and is incorporated herein by reference.

- ☐ Microfiche Computer Program (Appendix)
- ☐ page(s) of Sequence Listing
- ☐ computer readable disk containing Sequence Listing
- ☐ Statement under 37 C.F.R. §1.821(f) that computer and paper copies of the Sequence Listing are the same
- ☒ Assignment Papers (assignment cover sheet and assignment documents)
- ☐ A check in the amount of \$40.00 for recording the Assignment
- ☐ Charge the Assignment Recordation Fee to Deposit Account No. 13-4503, Order No. . . .
- ☒ Assignment Papers filed in the parent application Serial No. 09/025,184
- ☐ Certification of chain of title pursuant to 37 C.F.R. §3.73(b)
- ☒ Priority is claimed under 35 U.S.C. §119 for:  
Application No(s). 9-035129, filed 2/19/97, in Japan (country).
- ☒ Certified Copy of Priority Document(s) [     ]
- ☐ filed herewith
- ☒ filed in application Serial No. 09/025,184, filed 2/18/98.
- ☐ English translation document(s) [     ]
- ☐ filed herewith
- ☐ filed in application Serial No. \_\_\_\_\_, filed \_\_\_\_\_.
- ☐ Priority is claimed under 35 U.S.C. §119(e) for:  
Provisional Application No. \_\_\_\_\_, filed \_\_\_\_\_.
- ☐ Priority is claimed under 35 U.S.C. §120 for:  
Application No(s). \_\_\_\_\_, filed \_\_\_\_\_, in \_\_\_\_\_.
- ☐ Information Disclosure Statement
- ☐ Copy of [     ] cited references
- ☐ PTO Form-1449
- ☐ References cited in parent application Serial No. \_\_\_\_\_, filed \_\_\_\_\_.
- ☐ Preliminary Amendment
- ☒ Return receipt postcard (MPEP 503)
- ☒ This is a ☐ continuation ☒ divisional ☐ continuation-in-part of prior application serial no. 09/025,184, filed 2/18/98.
- ☒ Cancel in this application original claims 1-7 and 13, 14 of the parent application before calculating the filing fee. (At least one original independent claim must be retained for filing purposes.)
- ☐ A Preliminary Amendment is enclosed. (Claims added by this Amendment have been properly numbered consecutively beginning with the number following the highest numbered original claim in the prior application.
- ☐ The status of the parent application is as follows:

- ☐ A Petition for Extension of Time and a Fee therefor has been or is being filed in the parent application to extend the term for action in the parent application until \_\_\_\_\_.
- ☐ A copy of the Petition for Extension of Time in the co-pending parent application is attached.
- ☒ No Petition for Extension of Time and Fee therefor are necessary in the co-pending parent application.
- ☐ Please abandon the parent application at a time while the parent application is pending or at a time when the petition for extension of time in that application is granted and while this application is pending has been granted a filing date, so as to make this application co-pending.
- ☐ Transfer the drawing(s) from the parent application to this application
- ☒ Amend the specification by inserting before the first line the sentence:  
This is a continuation of co-pending application Serial No. 09/025,184, filed 2/18/98.

I. CALCULATION OF APPLICATION FEE				
	Number Filed	Number Extra	Rate	Basic Fee \$690.00/345.00
Total Claims	17- 20 =	0	\$18.00/\$9.00	\$ 0
Independent Claims	8- 3 =	5x	\$78.00/\$34.00	\$ 390.00
<input type="checkbox"/> Multiple Dependent Claims		If marked, add fee of \$260.00 (\$130.00)		\$
TOTAL:				\$ 1080.00

- ☐ A statement claiming small entity status is attached or has been filed in the above-identified parent application and its benefit under 37 C.F.R. §1.28(a) is hereby claimed. Reduced fees under 37 C.F.R. §1.9 (f) paid herewith \$\_\_\_\_\_.
- ☐ A check in the amount of \$ \_\_\_\_\_ in payment of the application filing fees is attached.
- ☒ Charge fee to Deposit Account No. 13-4503 Order No. 1232-4423US1. A DUPLICATE COPY OF THIS SHEET IS ATTACHED.

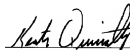
- ☒ The Assistant Commissioner is hereby authorized to charge any additional fees which may be required for filing this application pursuant to 37 CFR §1.16, including all extension of time fees pursuant to 37 C.F.R. § 1.17 for maintaining copendency with the parent application, or credit any overpayment to Deposit Account No. 13-4503 Order No. 1232-4423US1. A DUPLICATE COPY OF THIS SHEET IS ATTACHED.

Respectfully submitted,

MORGAN & FINNEGAN, L.L.P.

Dated: June 7, 2000

By:



Keats A. Quinalty  
Registration No. 746,426  
(202) 857-7887 Telephone  
(202) 857-7929 Facsimile

CORRESPONDENCE ADDRESS:

MORGAN & FINNEGAN, L.L.P.  
345 Park Avenue  
New York, NY 10154

## Data Communication Apparatus and Method

### BACKGROUND OF THE INVENTION

#### Field of the Invention

5           The present invention relates to data communication apparatus and method for effectively communicating image data.

#### Related Background Art

Conventionally, in image communication to transmit  
10   and receive image information between terminals, especially, when it aims to transmit the image information to a specified individual, a facsimile apparatus for transmitting and receiving the image information based on a dedicated protocol by using  
15   mainly a public line, a method for adding an image file to an electronic mail transmitted between computer terminals connected to a network, or the like has been utilized.

Further, although it does not aim to transmit the  
20   image information to the specified individual, a WWW (World Wide Web) system utilizing a computer communication network becomes noticeable since an internet has been popularized. Like an internet application such as the electronic mail or the like,  
25   such the WWW system is a client/server system based on a communication protocol called a TCP/IP (Transmission Control Protocol/Internet Protocol). Further, such the

WWW system has been developed as an information retrieval/provision system which can be realized by communicating not only the image information but also data such as text data, voice data, animation data and the like handled in a computer, between a client application having a GUI (Graphical User Interface) called a WWW browser and a WWW server application.

However, in case of utilizing the image communication performed by the above conventional facsimile apparatus, a reception side can not confirm or know what kind of image was transmitted until the transmitted image is actually printed. For this reason, there has been a problem that, even if the transmitted image is unnecessary information for the reception side, an operator at the reception side can not previously confirm contents of such the information to cancel unnecessary reception. Further, the facsimile apparatus tends to be utilized in common by plural operators, there is a premise that the image is transmitted between the two facsimile apparatuses, and the image is transmitted based on one-sided intention of the operator at the transmitter-side facsimile apparatus. Therefore, there have been problems that it is not assured that the transmitted image certainly reaches the operator (individual) at an intended destination, and also there is some fear that contents of the transmitted image are seen by a person other

than the operator at the destination. Furthermore,  
when the operator at the transmission side aims to  
cause the operator at the destination to confirm  
necessity or unnecessity of the transmitted image,  
5 there has been inconvenience that the operator at the  
transmitter side must utilize other means, e.g., a  
telephone or the like, for such confirmation.

On the other hand, in such the conventional method  
as the image file is added to the electronic mail  
10 transmitted between the computer terminals connected to  
the network, since the electronic mail essentially  
intended for the individual is utilized, it is possible  
to solve the above-described problem by securing  
certainty that the image is transmitted to the operator  
15 at the destination. However, like the case where the  
facsimile apparatus is used, if the communication is  
not completed, the operator on the reception side can  
not confirm the received image. Therefore, there has  
been a problem that, even if the transmitted  
20 information is unnecessary for the reception side, the  
operator on the reception side can not previously  
confirm it and thus can not previously avoid receiving  
it. Further, since the electronic mail essentially  
aims to transmit and receive text data, if such the  
25 high-resolution and high-quality image file as used in  
the printing is added to the electronic mail, the data  
of which amount is significantly large must be

transmitted, thereby seriously loading an electronic mail server. Furthermore, in order to display such the image file on a display device of the reception terminal, there has been a problem that a display application software is necessary, and a large-capacity memory is also necessary, thereby seriously loading a CPU.

#### SUMMARY OF THE INVENTION

10       An object of the present invention is to provide data communication apparatus and method which solve or eliminate the above-described conventional problems.

          An another object of the present invention is to provide data communication apparatus and method which  
15       can transmit image information to a destination without increasing a load to a mail server.

          A still another object of the present invention is to provide image communication apparatus and method which can transmit image data on the basis of an  
20       instruction from a reception side.

          A still another object of the present invention is to provide image communication apparatus and method which can switch a communication method according to communication contents.

25       The above and other objects, features, and advantages of the present invention will be apparent from the following detailed description and the



appended claims in conjunction with the accompanying drawings.

#### BRIEF DESCRIPTION OF THE DRAWINGS

5           Fig. 1 is a block diagram showing schematic structure of an image communication apparatus according to an embodiment of the present invention;

            Fig. 2 is a view showing structure of an image communication system according to the embodiment of the present invention;

10

            Fig. 3 is a flow chart showing a process for transmitting an electronic mail by an image communication apparatus a;

            Fig. 4 is a flow chart showing a process performed on the electronic mail received by a terminal 24 at a transmission destination; and

15

            Fig. 5 is a flow chart showing a process as to handling of image data by the image communication apparatus.

20

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Hereinafter, an embodiment of the present invention will be explained in detail with reference to the accompanying drawings.

25           Fig. 1 is a block diagram showing structure of an image communication apparatus according to the present embodiment.

In Fig. 1, reference numeral 11 denotes a CPU (central processing unit) which controls each unit in the apparatus based on programs stored in a ROM (read-only memory). Reference numeral 12 denotes a display unit which performs various displaying. For example, the display unit 12 displays a state of the apparatus, a screen for urging an operator to perform various operations, and the like. Reference numeral 13 denotes a console unit by which the operator inputs instructions according to the displaying on the display unit 12. The console unit 13 may comprise any input device such as a key input button, a pointing device (e.g., mouse), a touch panel or the like. Reference numeral 14 denotes a storage unit which stores data representing an input image or the like as a file. Reference numeral 15 denotes a communication control unit which controls connection of the apparatus to an external network.

An image input unit 18 and an image output unit 19 are connected to an image input/output control unit 17 and controlled according to instructions from the CPU 11. An image conversion unit 16 converts image quality such as resolution or the like.

Fig. 2 is a view showing system structure of an image communication system to which the image communication apparatus according to the present embodiment is connected.

In Fig. 2, reference numerals 21 and 22 respectively denote the image communication apparatuses shown in Fig. 1. To simplify the explanation, it is assumed that the apparatus 21 is handled as an image communication apparatus a to be used for transmitting the data and the apparatus 22 is handled as an image communication apparatus b to be used for outputting a received image.

Each of the image communication apparatuses 21 and 22 has an image input/output function, a network communication function based on TCP/IP (Transmission Control Protocol/Internet Protocol) connection, a WWW (World Wide Web) server function, and an electronic mail transmission/reception function. Reference numeral 23 denotes a terminal which has been registered as a reply destination used when the image transmission is performed by the image communication apparatus a, and reference numeral 24 is a terminal which has been registered as an image transmission destination to which the image transmission is performed from the image communication apparatus a. These terminals are computer terminals (including CPU, memory, display unit and the like) which are connected to a network 26. Further, reference numeral 25 denotes a mail server which provides electronic mail services to the terminals respectively connected to the network 26. The apparatuses 21 and 22 and the terminals 23 and 24

are all connected to others by means of the network 26.  
In this network 26, if each apparatus or terminal is  
connected based on the TCP/IP, they may be connected to  
others through any line and/or any protocol conversion  
5 on the way.

Subsequently, the operation of the image  
communication apparatus of such the structure as  
described above in the present embodiment will be  
explained in detail with reference to flow charts shown  
10 in Figs. 3 to 5. These flow charts correspond to the  
control flows which are performed by the CPU 11 on the  
basis of program data stored in the memory of the  
apparatus.

Fig. 3 is the flow chart showing the operation  
15 that an operator of the image communication apparatus a  
performs the transmission operation and thus an  
electronic mail is transmitted to a transmission  
destination.

In Fig. 3, in a step S101, it is initially  
20 recognized that an original to be transmitted to the  
image input unit 18 has been set by the operator.  
Then, in a step S102, it is further recognized the  
transmission destination and an instruction reply  
destination which have been set by the operator from  
25 the console unit 13 according to guidance displayed on  
the display unit 12. At this time, it is possible to  
add previously prepared fixed-form text and/or comment

by operator's input operation or preliminary setting. After confirming the input setting, the flow advances to a step S103.

In the step S103, it waits for key inputting to start the transmission. When it is instructed by the operator from the console unit 13 to start the transmission, the flow advances to a step S104. In the step S104, the image on the original to be transmitted which has been set from the image input unit 18 connected to the image input/output control unit 17 is read with a first image quality, the obtained image data is stored as an image file in the storage unit 14, and then the flow advances to a step S105. In the step S105, the setting is changed to store the image file based on a second image quality of which resolution and color reproducibility are different from those of the first image quality. According to the changed setting, in a step S106, it is instructed to store the image file based on the second image quality. In this case, the original to be transmitted may be again read from the image input unit 18 to obtain the image data of the second image quality, or the image file of the second image quality may be formed by converting the data of the image file based on the first image quality with the image conversion unit 16. In any case, the image files based on the two kinds of image qualities are formed from the identical image. The image files of

the different image qualities formed and stored in such the manner as above are utilized as a display image (coarse image of which data amount is small) and a print image (high-quality image). The display image is displayed on a terminal on a receiver side and used to confirm the received image, and the print image is transferred as print data after the receiver side confirmed such the display image. It is possible to prepare the plural display images and the plural print images to enable providing them according to display capability and print capability of the terminal on the receiver side or the image communication apparatus used for the image outputting. Further, the display image and the print image can be appropriately converted by the image conversion unit 16. By such the processes, when the image files of the respective image qualities are correlated with the information set in the step S102 and then stored into the storage unit 14, the flow advances to a step S107. In the step S107, locations of the display image files and the print image files formed and stored till that time are described in an HTML (HyperText Markup Language) and then stored in the storage unit 14.

The locations of such the HTML file and the display data are described in a URL (Uniform Resource Locator) which integratively describes information resources on an internet. A general format of the URL

to be utilized in a WWW system is shown as  
"resource\_type://host.domain/path".

In this case, the format "resource\_type" shows the  
used protocol or services, and designates an http  
5 (hypertext transfer protocol) in the image  
communication apparatus of the present embodiment. In  
other cases, although such a protocol as "gopher",  
"ftp", "nntp" or the like may be designated, the  
concrete explanation thereof is omitted. Further, the  
10 format "host.domain" shows an address of the server on  
the internet to be accessed, and is designated in an IP  
address format or a domain address format. In the  
image communication apparatus of the present  
embodiment, the IP address of the WWW server is  
15 designated. Furthermore, the format "path" shows a  
position of the file in the server. For example, in  
the image communication apparatus of the present  
embodiment, the location of the HTML file is described  
as "http://Server\_ip\_address/□□□/xxx.html". Further,  
20 the location of the display data for confirming the  
stored transmission image is described as "<IMG SRC =  
"http://Server\_ip\_address/□□□/○○○.△△△">" in an HTML tag  
system.

In this case, the extension "△△△" generally uses a  
25 compression image file format such as GIF, JPG or the  
like. Such the extension is interpreted by using a WWW  
browser being the client application in the WWW system.

When demanding the image file such as "○○○.△△△" from a WWW server of the image communication apparatus, the WWW browser can display such the image file.

In a step S108, the transmission text (i.e., text  
5 to be transmitted) including the transmission destination, the instruction reply destination, the fixed-form text, the comment input and the like set in the step S102 is formed based on a known general-purpose electronic mail format. Further, the location  
10 of the HTML file formed and stored in the step S107 is added to the transmission text of the electronic mail. In a step S109, the transmission text of the electronic mail formed in such the manner as above is transmitted to the destination designated based on the transmission  
15 function of the electronic mail included in the image transmission apparatus a, as the electronic mail. Then, the transmitted electronic mail is sent to the transmission terminal 24 through the mail server 25.

Subsequently, with reference to Fig. 4, it will be  
20 explained in detail the operation that the receiver at the transmission destination receives the electronic mail, confirms the display image and provides various instructions to the image communication apparatus a at the transmission source. This flow chart corresponds  
25 to the control flow which is performed by the CPU on the basis of a program installed in the memory of the terminal 24 at the transmission destination.



In Fig. 4, initially in a step S111, the receiver who received the electronic mail causes the display unit to display the text contents of the received electronic mail and confirms the displayed contents, by  
5 using an electronic mail client application. Such the contents of the electronic mail include information representing that this electronic mail was sent by such special image transmission service as described in the present embodiment, a message to urge the operator to  
10 access the added URL by using the WWW browser, information concerning the transmitter, a comment from the transmitter and the like, but the contents described in the electronic mail are not limited thereto. Such the contents can be implicitly managed  
15 depending on circumstance.

In a step S112, it is judged whether or not the receiver of the electronic mail instructs (by clicking the URL portion described in the HTML text with use of the pointing device or the like) to confirm the image  
20 on the basis of the described contents. If there is the receiver's instruction, the flow advances to a step S113. In this case, if the electronic mail client application having a function to initiate the WWW browser from the URL described in the text of the  
25 electronic mail is utilized, it is possible to immediately confirm the image. However, even if the electronic mail client application not having such the

function is utilized, it is possible to confirm the image by initiating the WWW browser independently.

In the step S113, the WWW browser demands, from the image communication apparatus a, the HTML file which was formed and stored in the image communication apparatus a in the step S107 and is represented by the above URL. Since the image communication apparatus a has a WWW server function, the apparatus a supplies responsive to the demand from the WWW browser the designated HTML file to such the WWW browser. Further, the WWW browser analyzes the supplied HTML file. Then, according to the URL in which the display image described in the text and being a source object to be displayed has been described, the WWW browser again demands to display such the display image.

In a step S114, since the display image demanded by the WWW browser is supplied, the WWW browser causes the display unit of the terminal 24 to display the supplied display image. As a result, the receiver of the electronic mail can confirm, as a visible image, outline of the image transmitted from the image communication apparatus a on the display unit of the transmission destination terminal 24 logged in by the user at the destination.

After the confirmation of the display image by the receiver of the electronic mail, the flow further advances to a step S115. In an image communication

system according to the present embodiment, since the image is displayed on the transmission destination terminal 24, the operator can instruct the apparatus to print out the high-quality print image simultaneously with the confirmation of the image. In the step S115, the displaying to instruct whether or not the print image is to be printed out is performed on the same screen as that for the display image, and the instructed contents responsive thereto are transmitted to the image communication apparatus a.

The function included in the WWW browser can be utilized in such an instruction and transmission method. That is, the WWW system includes a CGI (Common Gateway Interface) for transferring the input from the client (i.e., WWW browser) to the server to process such the input based on an external program. For example, in a case where an object (text, bit map data or the like) for instructing the printout of the print image is buried in the HTML text displayed on the WWW browser and it is set that the previously prepared instruction contents are transferred to the server if the object is selected, it is possible that the server which received the transferred instruction analyzes the instruction contents and initiates the program to transfer and print the print data. Further, by utilizing the CGI, it becomes possible to transfer not only the previously prepared instruction contents but

also the data inputted by the operator. Therefore, by utilizing the data inputted by the operator, it becomes possible to instruct the system to transfer and print out the print image to not only the specific image communication apparatus but also the arbitrary image communication apparatus based on such the input data. In any case, the above instruction and transmission method is not limited to the method which utilizes the above CGI. That is, any instruction and transmission method may be used, if such the method is based on the application executable between the server (i.e., the image communication apparatus a) and the client (i.e., the terminal displaying the display image). If the printout of the print image is instructed in the step S115, the flow advances to a step S116 to transfer the instruction contents to the image communication apparatus a in the above-described instruction and transmission method.

If the operator does not instruct the apparatus to print out the print image in the step S115, the flow advances to a step S117. In the step S117, it is selected by the operator whether the image data of which printout is not instructed is not to be printed out but to be stored as the file after the print image was transferred, or the image data is to be abandoned or deleted. If it is selected to transfer and store the print image in the step S117, the flow advances to

a step S118. On the other hand, if it is selected to abandon the print image, the flow advances to a step S119. In the steps S118 and S119, like the above-described print instruction, the instruction contents  
5 are transmitted to the image communication apparatus a.

Subsequently, with reference to the flow chart shown in Fig. 5, it will be explained in detail the operation that the image communication apparatus a receives the instruction contents from the receiver and  
10 analyzes the received contents, and then the process terminates.

In Fig. 5, initially in a step S121, the received instruction contents (either one of instructions in the steps S116, S118 and S119) are stored in the storage  
15 unit 14. After then, the flow advances to a step S122 to specify the setting on the transmission image in the step S102 performed at the image transmission time on the basis of the received instruction contents, and transfer such the instruction.contents to the reply  
20 destination terminal 23 being the instruction reply destination on the basis of the instruction reply destination information. In this case, the transferring of the instruction contents to the instruction reply destination is realized by  
25 transmitting the electronic mail. The instruction reply destination which received the instruction contents through the electronic mail can confirm

transmission destination's action (i.e., abandonment, storage, print) on the image transmitted from the image communication apparatus a on the basis of the displaying on the display unit of the terminal. For this reason, it becomes possible to confirm whether or not the transmitted image was confirmed by the transmission destination. Further, it becomes possible to confirm the instruction on the transmitted image sent from the partner (i.e., transmission destination).

10 After transferring the instruction contents to the instruction reply destination, the flow advances to a step S123.

In the step S123, the received instruction contents are analyzed. If the contents instruct to abandon the image data, the flow advances to a step 15 S124 to delete the image file stored in the storage unit 14, and then the process terminates. On the other hand, if the contents instruct to transfer and print the image data or transfer and store the image data, 20 the flow advances to a step S125. In the step S125, the print image is transferred to the previously designated image communication apparatus or to the image communication apparatus based on the data inputted by the operator of the reply destination

25 terminal 24. In this case, the data transferring from the image communication apparatus a to the image communication apparatus b and the data storing as the

file are performed without using the mail server 25. When such the data transferring and the file storing terminate, the flow advances to a step S126. In the step S126, based on the instruction from the image communication apparatus a 21, the image communication apparatus b 22 judges whether or not the print image transferred and stored as the file is to be printed. If not printed, the process terminates as it is. On the other hand, if printed, the flow advances to a step 10 S127, the print image is transferred from the storage unit 14 to the image input/output control unit 17 and then printed out by the image output unit 19. After then, the process terminates.

It should be noted that all the operations shown 15 in the flow charts of Figs. 3 to 5 are confirmed as a series of communication on the identical image by checking IDs.

As explained above, according to the present embodiment, by utilizing the WWW server function and 20 the transmission/reception function of the electronic mail, the image files of plural image qualities are stored, the file for describing by the HTML text the location of the file suitable to display the image outline is generated from the stored image files, and 25 the electronic mail in which the location of the HTML file was added to transmission guide information concerning the transfer image is transmitted to the

electronic mail address at the designated destination. Therefore, the transmitter who transmits the image information from the image communication apparatus a can certainly transmit the information to the specific individual destination, and the receiver who received the electronic mail from the image communication apparatus a can display and confirm the outline of the transmitted display image on the computer terminal, e.g., the terminal 24, which received the electronic mail, by utilizing a WWW server and client system through the network.

Further, the instruction to the image file based on the operation by the receiver who received the electronic mail is received by a communication means, the image file of desired image quality is selected from among the stored image files according to the received instruction and is transferred to the designated image communication apparatus b, and then the image is outputted based on the transferred image file. Therefore, the image data is directly transferred between the image communication apparatuses on the basis of the judgment by the receiver who confirmed the image, whereby the image reproduced by the high-quality print image data can be transmitted without adding the large-capacity file data probably loading the electronic mail system and the reception terminal.



Furthermore, on the basis of the operation by the operator who received the electronic mail, the designated image communication apparatus b is instructed to output the image file of desired image quality the moment that this file is transferred to this apparatus, to store this image file without the outputting, or to abandon the stored image file. Therefore, it is possible to avoid the transferring of unnecessary information according to circumstances, and also it is possible to postpone the printing output according to secretion of information.

Furthermore, the instruction contents from the receiver of the electronic mail are stored, and the stored instruction contents are transmitted by means of the electronic mail to the destination previously designated by the operator on the transmission side, whereby the transmitted image can certainly reach the destination individual. Therefore, such the transmitted image can be utilized, when the terminal, e.g., the terminal 23, at the destination designated by the operator on the transmission side confirms that the image was confirmed by the operator himself on the reception side, and that the image was transferred and printed or the image was judged to be unnecessary and thus data abandonment was instructed.

The present invention may be applied to a system constituted by plural apparatuses (e.g., host computer,

interface unit, reader, printer and the like) or to a system constituted by a single apparatus (e.g., copy machine or facsimile machine).

5       The invention employed by a method wherein program codes of a software to realize the functions of the above-described embodiment are supplied to a computer in an apparatus or a system connected to various devices so as to make the devices operative in order to realize the functions of the above-described embodiment and the various devices are operated in accordance with  
10       the programs stored in the computer (CPU or MPU) of the system or apparatus is also included in the scope of the present invention.

15       In such the case, the program codes themselves of the software realize the functions of the above-described embodiment and the program codes themselves and means for supplying the program codes to the computer, e.g., a storage medium in which the program codes have been stored, construct the present  
20       invention.

25       As such the storage medium to store the program codes, for example, a floppy disk, a hard disk, an optical disk, a magneto-optical disk, a CD-ROM, a magnetic tape, a nonvolatile memory card, a ROM or the like can be used.

      Also, in not only a case where the functions of the above-described embodiment are realized by

executing the supplied program codes by the computer but also a case where the functions of the above-described embodiment are realized in cooperation with an OS (operating system) by which the program codes  
5 operate in the computer or another application software or the like, such the program codes are of course included in the scope of the present invention.

Further, of course, the present invention also includes a case where the supplied program codes are  
10 stored in a memory provided for a function expansion board of a computer or a function expansion unit connected to a computer and, after that, a CPU or the like provided for the function expansion board or the function expansion unit executes a part or all of the  
15 actual processes based on the instructions of the program codes, and the functions of the above-described embodiment are realized by such the processes.

As explained above, according to the present embodiment, since based on the contents of the  
20 electronic mail the image data is transmitted by using the means other than the electronic mail, the image data can be easily and certainly transmitted to the receiver without loading the mail server or the like.

The present invention has been described in  
25 connection with the above preferred embodiment. However, the present invention is not limited only to the above-described embodiment, but various

modifications are possible without departing from the scope of the appended claims.

11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60  
61  
62  
63  
64  
65  
66  
67  
68  
69  
70  
71  
72  
73  
74  
75  
76  
77  
78  
79  
80  
81  
82  
83  
84  
85  
86  
87  
88  
89  
90  
91  
92  
93  
94  
95  
96  
97  
98  
99  
100  
101  
102  
103  
104  
105  
106  
107  
108  
109  
110  
111  
112  
113  
114  
115  
116  
117  
118  
119  
120  
121  
122  
123  
124  
125  
126  
127  
128  
129  
130  
131  
132  
133  
134  
135  
136  
137  
138  
139  
140  
141  
142  
143  
144  
145  
146  
147  
148  
149  
150  
151  
152  
153  
154  
155  
156  
157  
158  
159  
160  
161  
162  
163  
164  
165  
166  
167  
168  
169  
170  
171  
172  
173  
174  
175  
176  
177  
178  
179  
180  
181  
182  
183  
184  
185  
186  
187  
188  
189  
190  
191  
192  
193  
194  
195  
196  
197  
198  
199  
200  
201  
202  
203  
204  
205  
206  
207  
208  
209  
210  
211  
212  
213  
214  
215  
216  
217  
218  
219  
220  
221  
222  
223  
224  
225  
226  
227  
228  
229  
230  
231  
232  
233  
234  
235  
236  
237  
238  
239  
240  
241  
242  
243  
244  
245  
246  
247  
248  
249  
250  
251  
252  
253  
254  
255  
256  
257  
258  
259  
260  
261  
262  
263  
264  
265  
266  
267  
268  
269  
270  
271  
272  
273  
274  
275  
276  
277  
278  
279  
280  
281  
282  
283  
284  
285  
286  
287  
288  
289  
290  
291  
292  
293  
294  
295  
296  
297  
298  
299  
300  
301  
302  
303  
304  
305  
306  
307  
308  
309  
310  
311  
312  
313  
314  
315  
316  
317  
318  
319  
320  
321  
322  
323  
324  
325  
326  
327  
328  
329  
330  
331  
332  
333  
334  
335  
336  
337  
338  
339  
340  
341  
342  
343  
344  
345  
346  
347  
348  
349  
350  
351  
352  
353  
354  
355  
356  
357  
358  
359  
360  
361  
362  
363  
364  
365  
366  
367  
368  
369  
370  
371  
372  
373  
374  
375  
376  
377  
378  
379  
380  
381  
382  
383  
384  
385  
386  
387  
388  
389  
390  
391  
392  
393  
394  
395  
396  
397  
398  
399  
400  
401  
402  
403  
404  
405  
406  
407  
408  
409  
410  
411  
412  
413  
414  
415  
416  
417  
418  
419  
420  
421  
422  
423  
424  
425  
426  
427  
428  
429  
430  
431  
432  
433  
434  
435  
436  
437  
438  
439  
440  
441  
442  
443  
444  
445  
446  
447  
448  
449  
450  
451  
452  
453  
454  
455  
456  
457  
458  
459  
460  
461  
462  
463  
464  
465  
466  
467  
468  
469  
470  
471  
472  
473  
474  
475  
476  
477  
478  
479  
480  
481  
482  
483  
484  
485  
486  
487  
488  
489  
490  
491  
492  
493  
494  
495  
496  
497  
498  
499  
500  
501  
502  
503  
504  
505  
506  
507  
508  
509  
510  
511  
512  
513  
514  
515  
516  
517  
518  
519  
520  
521  
522  
523  
524  
525  
526  
527  
528  
529  
530  
531  
532  
533  
534  
535  
536  
537  
538  
539  
540  
541  
542  
543  
544  
545  
546  
547  
548  
549  
550  
551  
552  
553  
554  
555  
556  
557  
558  
559  
560  
561  
562  
563  
564  
565  
566  
567  
568  
569  
570  
571  
572  
573  
574  
575  
576  
577  
578  
579  
580  
581  
582  
583  
584  
585  
586  
587  
588  
589  
590  
591  
592  
593  
594  
595  
596  
597  
598  
599  
600  
601  
602  
603  
604  
605  
606  
607  
608  
609  
610  
611  
612  
613  
614  
615  
616  
617  
618  
619  
620  
621  
622  
623  
624  
625  
626  
627  
628  
629  
630  
631  
632  
633  
634  
635  
636  
637  
638  
639  
640  
641  
642  
643  
644  
645  
646  
647  
648  
649  
650  
651  
652  
653  
654  
655  
656  
657  
658  
659  
660  
661  
662  
663  
664  
665  
666  
667  
668  
669  
670  
671  
672  
673  
674  
675  
676  
677  
678  
679  
680  
681  
682  
683  
684  
685  
686  
687  
688  
689  
690  
691  
692  
693  
694  
695  
696  
697  
698  
699  
700  
701  
702  
703  
704  
705  
706  
707  
708  
709  
710  
711  
712  
713  
714  
715  
716  
717  
718  
719  
720  
721  
722  
723  
724  
725  
726  
727  
728  
729  
730  
731  
732  
733  
734  
735  
736  
737  
738  
739  
740  
741  
742  
743  
744  
745  
746  
747  
748  
749  
750  
751  
752  
753  
754  
755  
756  
757  
758  
759  
760  
761  
762  
763  
764  
765  
766  
767  
768  
769  
770  
771  
772  
773  
774  
775  
776  
777  
778  
779  
780  
781  
782  
783  
784  
785  
786  
787  
788  
789  
790  
791  
792  
793  
794  
795  
796  
797  
798  
799  
800  
801  
802  
803  
804  
805  
806  
807  
808  
809  
810  
811  
812  
813  
814  
815  
816  
817  
818  
819  
820  
821  
822  
823  
824  
825  
826  
827  
828  
829  
830  
831  
832  
833  
834  
835  
836  
837  
838  
839  
840  
841  
842  
843  
844  
845  
846  
847  
848  
849  
850  
851  
852  
853  
854  
855  
856  
857  
858  
859  
860  
861  
862  
863  
864  
865  
866  
867  
868  
869  
870  
871  
872  
873  
874  
875  
876  
877  
878  
879  
880  
881  
882  
883  
884  
885  
886  
887  
888  
889  
890  
891  
892  
893  
894  
895  
896  
897  
898  
899  
900  
901  
902  
903  
904  
905  
906  
907  
908  
909  
910  
911  
912  
913  
914  
915  
916  
917  
918  
919  
920  
921  
922  
923  
924  
925  
926  
927  
928  
929  
930  
931  
932  
933  
934  
935  
936  
937  
938  
939  
940  
941  
942  
943  
944  
945  
946  
947  
948  
949  
950  
951  
952  
953  
954  
955  
956  
957  
958  
959  
960  
961  
962  
963  
964  
965  
966  
967  
968  
969  
970  
971  
972  
973  
974  
975  
976  
977  
978  
979  
980  
981  
982  
983  
984  
985  
986  
987  
988  
989  
990  
991  
992  
993  
994  
995  
996  
997  
998  
999  
1000  
1001  
1002  
1003  
1004  
1005  
1006  
1007  
1008  
1009  
1010  
1011  
1012  
1013  
1014  
1015  
1016  
1017  
1018  
1019  
1020  
1021  
1022  
1023  
1024  
1025  
1026  
1027  
1028  
1029  
1030  
1031  
1032  
1033  
1034  
1035  
1036  
1037  
1038  
1039  
1040  
1041  
1042  
1043  
1044  
1045  
1046  
1047  
1048  
1049  
1050  
1051  
1052  
1053  
1054  
1055  
1056  
1057  
1058  
1059  
1060  
1061  
1062  
1063  
1064  
1065  
1066  
1067  
1068  
1069  
1070  
1071  
1072  
1073  
1074  
1075  
1076  
1077  
1078  
1079  
1080  
1081  
1082  
1083  
1084  
1085  
1086  
1087  
1088  
1089  
1090  
1091  
1092  
1093  
1094  
1095  
1096  
1097  
1098  
1099  
1100  
1101  
1102  
1103  
1104  
1105  
1106  
1107  
1108  
1109  
1110  
1111  
1112  
1113  
1114  
1115  
1116  
1117  
1118  
1119  
1120  
1121  
1122  
1123  
1124  
1125  
1126  
1127  
1128  
1129  
1130  
1131  
1132  
1133  
1134  
1135  
1136  
1137  
1138  
1139  
1140  
1141  
1142  
1143  
1144  
1145  
1146  
1147  
1148  
1149  
1150  
1151  
1152  
1153  
1154  
1155  
1156  
1157  
1158  
1159  
1160  
1161  
1162  
1163  
1164  
1165  
1166  
1167  
1168  
1169  
1170  
1171  
1172  
1173  
1174  
1175  
1176  
1177  
1178  
1179  
1180  
1181  
1182  
1183  
1184  
1185  
1186  
1187  
1188  
1189  
1190  
1191  
1192  
1193  
1194  
1195  
1196  
1197  
1198  
1199  
1200  
1201  
1202  
1203  
1204  
1205  
1206  
1207  
1208  
1209  
1210  
1211  
1212  
1213  
1214  
1215  
1216  
1217  
1218  
1219  
1220  
1221  
1222  
1223  
1224  
1225  
1226  
1227  
1228  
1229  
1230  
1231  
1232  
1233  
1234  
1235  
1236  
1237  
1238  
1239  
1240  
1241  
1242  
1243  
1244  
1245  
1246  
1247  
1248  
1249  
1250  
1251  
1252  
1253  
1254  
1255  
1256  
1257  
1258  
1259  
1260  
1261  
1262  
1263  
1264  
1265  
1266  
1267  
1268  
1269  
1270  
1271  
1272  
1273  
1274  
1275  
1276  
1277  
1278  
1279  
1280  
1281  
1282  
1283  
1284  
1285  
1286  
1287  
1288  
1289  
1290  
1291  
1292  
1293  
1294  
1295  
1296  
1297  
1298  
1299  
1300  
1301  
1302  
1303  
1304  
1305  
1306  
1307  
1308  
1309  
1310  
1311  
1312  
1313  
1314  
1315  
1316  
1317  
1318  
1319  
1320  
1321  
1322  
1323  
1324  
1325  
1326  
1327  
1328  
1329  
1330  
1331  
1332  
1333  
1334  
1335  
1336  
1337  
1338  
1339  
1340  
1341  
1342  
1343  
1344  
1345  
1346  
1347  
1348  
1349  
1350  
1351  
1352  
1353  
1354  
1355  
1356  
1357  
1358  
1359  
1360  
1361  
1362  
1363  
1364  
1365  
1366  
1367  
1368  
1369  
1370  
1371  
1372  
1373  
1374  
1375  
1376  
1377  
1378  
1379  
1380  
1381  
1382  
1383  
1384  
1385  
1386  
1387  
1388  
1389  
1390  
1391  
1392  
1393  
1394  
1395  
1396  
1397  
1398  
1399  
1400  
1401  
1402  
1403  
1404  
1405  
1406  
1407  
1408  
1409  
1410  
1411  
1412  
1413  
1414  
1415  
1416  
1417  
1418  
1419  
1420  
1421  
1422  
1423  
1424  
1425  
1426  
1427  
1428  
1429  
1430  
1431  
1432  
1433  
1434  
1435  
1436  
1437  
1438  
1439  
1440  
1441  
1442  
1443  
1444  
1445  
1446  
1447  
1448  
1449  
1450  
1451  
1452  
1453  
1454  
1455  
1456  
1457  
1458  
1459  
1460  
1461  
1462  
1463  
1464  
1465  
1466  
1467  
1468  
1469  
1470  
1471  
1472  
1473  
1474  
1475  
1476  
1477  
1478  
1479  
1480  
1481  
1482  
1483  
1484  
1485  
1486  
1487  
1488  
1489  
1490  
1491  
1492  
1493  
1494  
1495  
1496  
1497  
1498  
1499  
1500  
1501  
1502  
1503  
1504  
1505  
1506  
1507  
1508  
1509  
1510  
1511  
1512  
1513  
1514  
1515  
1516  
1517  
1518  
1519  
1520  
1521  
1522  
1523  
1524  
1525  
1526  
1527  
1528  
1529  
1530  
1531  
1532  
1533  
1534  
1535  
1536  
1537  
1538  
1539  
1540  
1541  
1542  
1543  
1544  
1545  
1546  
1547  
1548  
1549  
1550  
1551  
1552  
1553  
1554  
1555  
1556  
1557  
1558  
1559  
1560  
1561  
1562  
1563  
1564  
1565  
1566  
1567  
1568  
1569  
1570  
1571  
1572  
1573  
1574  
1575  
1576  
1577  
1578  
1579  
1580  
1581  
1582  
1583  
1584  
1585  
1586  
1587  
1588  
1589  
1590  
1591  
1592  
1593  
1594  
1595  
1596  
1597  
1598  
1599  
1600  
1601  
1602  
1603  
1604  
1605  
1606  
1607  
1608  
1609  
1610  
1611  
1612  
1613  
1614  
1615  
1616  
1617  
1618  
1619  
1620  
1621  
1622  
1623  
1624  
1625  
1626  
1627  
1628  
1629  
1630  
1631  
1632  
1633  
1634  
1635  
1636  
1637  
1638  
1639  
1640  
1641  
1642  
1643  
1644  
1645  
1646  
1647  
1648  
1649  
1650  
1651  
1652  
1653  
1654  
1655  
1656  
1657  
1658  
1659  
1660  
1661  
1662  
1663  
1664  
1665  
1666  
1667  
1668  
1669  
1670  
1671  
1672  
1673  
1674  
1675  
1676  
1677  
1678  
1679  
1680  
1681  
1682  
1683  
1684  
1685  
1686  
1687  
1688  
1689  
1690  
1691  
1692  
1693  
1694  
1695  
1696  
1697  
1698  
1699  
1700  
1701  
1702  
1703  
1704  
1705  
1706  
1707  
1708  
1709  
1710  
1711  
1712  
1713  
1714  
1715  
1716  
1717  
1718  
1719  
1720  
1721  
1722  
1723  
1724  
1725  
1726  
1727  
1728  
1729  
1730  
1731  
1732  
1733  
1734  
1735  
1736  
1737  
1738  
1739  
1740  
1741  
1742  
1743  
1744  
1745  
1746  
1747  
1748  
1749  
1750  
1751  
1752  
1753  
1754  
1755  
1756  
1757  
1758  
1759  
1760  
1761  
1762  
1763  
1764  
1765  
1766  
1767  
1768  
1769  
1770  
1771  
1772  
1773  
1774  
1775  
1776  
1777  
1778  
1779  
1780  
1781  
1782  
1783  
1784  
1785  
1786  
1787  
1788  
1789  
1790  
1791  
1792  
1793  
1794  
1795  
1796  
1797  
1798  
1799  
1800  
1801  
1802  
1803  
1804  
1805  
1806  
1807  
1808  
1809  
1810  
1811  
1812  
1813  
1814  
1815  
1816  
1817  
1818  
1819  
1820  
1821  
1822  
1823  
1824  
1825  
1826  
1827  
1828  
1829  
1830  
1831  
1832  
1833  
1834  
1835  
1836  
1837  
1838  
1839  
1840  
1841  
1842  
1843  
1844  
1845  
1846  
1847  
1848  
1849  
1850  
1851  
1852  
1853  
1854  
1855  
1856  
1857  
1858  
1859  
1860  
1861  
1862  
1863  
1864  
1865  
1866  
1867  
1868  
1869  
1870  
1871  
1872  
1873  
1874  
1875  
1876  
1877  
1878  
1879  
1880  
1881  
1882  
1883  
1884  
1885  
1886  
1887  
1888  
1889  
1890  
1891  
1892  
1893  
1894  
1895  
1896  
1897  
1898  
1899  
1900  
1901  
1902  
1903  
1904  
1905  
1906  
1907  
1908  
1909  
1910  
1911  
1912  
1913  
1914  
1915  
1916  
1917  
1918  
1919  
1920  
1921  
1922  
1923  
1924  
1925  
1926  
1927  
1928  
1929  
1930  
1931  
1932  
1933  
1934  
1935  
1936  
1937  
1938  
1939  
1940  
1941  
1942  
1943  
1944  
1945  
1946  
1947  
1948  
1949  
1950  
1951  
1952  
1953  
1954  
1955  
1956  
1957  
1958  
1959  
1960  
1961  
1962  
1963  
1964  
1965  
1966  
1967  
1968  
1969  
1970  
1971  
1972  
1973  
1974  
1975  
1976  
1977  
1978  
1979  
1980  
1981  
1982  
1983  
1984  
1985  
1986  
1987  
1988  
1989  
1990  
1991  
1992  
1993  
1994  
1995  
1996  
1997  
1998  
1999  
2000  
2001  
2002  
2003  
2004  
2005  
2006  
2007  
2008  
2009  
2010  
2011  
2012  
2013  
2014  
2015  
2016  
2017  
2018  
2019  
2020  
2021  
2022  
2023  
2024  
2025  
2026  
2027  
2028  
2029  
2030  
2031  
2032  
2033  
2034  
2035  
2036  
2037  
2038  
2039  
2040  
2041  
2042  
2043  
2044  
2045  
2046  
2047  
2048  
2049  
2050  
2051  
2052  
2053  
2054  
2055  
2056  
2057  
2058  
2059  
2060  
2061  
2062  
2063  
2064  
2065  
2066  
2067  
2068  
2069  
2070  
2071  
2072  
2073  
2074  
2075  
2076  
2077  
2078  
2079  
2080  
2081  
2082  
2083  
2084  
2085  
2086  
2087  
2088  
2089  
2090  
2091  
2092  
2093  
2094  
2095  
2096  
2097  
2098  
2099  
2100  
2101  
2102  
2103  
2104  
2105  
2106  
2107  
2108  
2109  
2110  
2111  
2112  
2113  
2114  
2115  
2116  
2117  
2118  
2119  
2120  
2121  
2122  
2123  
2124  
2125  
2126  
2127  
2128  
2129  
2130  
2131  
2132  
2133  
2134  
2135  
2136  
2137  
2138  
2139  
2140  
2141  
2142  
2143  
2144  
2145  
2146  
2147  
2148  
2149  
2150  
2151  
2152  
2153  
2154  
2155  
2156  
2157  
2158  
2159  
2160  
2161  
2162  
2163  
2164  
2165  
2166  
2167  
2168  
2169  
2170  
2171  
2172  
2173  
2174  
2175  
2176  
2177  
2178  
2179  
2180  
2181  
2182  
2183  
2184  
2185  
2186  
2187  
2188  
2189  
2190  
2191  
2192  
2193  
2194  
2195  
2196  
2197  
2198  
2199  
2200  
2201  
2202  
2203  
2204  
2205  
2206  
2207  
2208  
2209  
2210  
2211  
2212  
2213  
2214  
2215  
2216  
2217  
2218  
2219  
2220  
2221  
2222  
2223  
2224  
2225  
2226  
2227  
2228  
2229  
2230  
2231  
2232  
2233  
2234  
2235  
223

WHAT IS CLAIMED IS:

1. A data communication apparatus comprising:  
input means for inputting image data;  
storage means for storing the image data inputted

5 by said input means;

mail transmission means for transmitting  
predetermined-format data concerning the image data  
inputted by said input means, as an electronic mail;

10 recognition means for recognizing an instruction  
from a transmission destination to which the electronic  
mail was transmitted by said mail transmission means;  
and

15 transmission means for transmitting the image data  
stored in said storage means, in a method other than  
the electronic mail on the basis of contents of the  
instruction recognized by said recognition means.

2. An apparatus according to Claim 1, wherein  
said storage means stores the image data inputted by  
20 said input means, as at least two image data  
respectively of different image quality, and

said transmission means transmits at least the  
image data of higher image quality in the image data  
stored in said storage means, without a mail server.

25

3. An apparatus according to Claim 1, wherein  
information representing presence of rough confirmation

image data stored in said storage means is included in the data transmitted by said mail transmission means.

4. An apparatus according to Claim 2, wherein  
5 said input means inputs the image data of different image quality by repeatedly reading an image on an identical original.

10 5. An apparatus according to Claim 2, further comprising conversion means for converting the image quality of the image data inputted by said input means, and

15 wherein the image data converted by said conversion means is inputted into said storage means.

6. An apparatus according to Claim 1, further comprising deletion means for deleting the image data stored in said storage means, on the basis of the contents of the instruction recognized by said  
20 recognition means.

7. An apparatus according to Claim 1, wherein said mail transmission means further transmits the contents of the instruction recognized by said  
25 recognition means, to a predetermined destination by using the electronic mail.

8. A data communication apparatus comprising:  
first transmission means for transmitting data  
representing existence of additional information to a  
transmission destination;

5 reception means for receiving a reply from the  
transmission destination for the data transmitted by  
said first transmission means; and

second transmission means for transmitting the  
additional information on the basis of the reply  
10 received by said reception means.

9. An apparatus according to Claim 8, wherein  
said second transmission means transmits the additional  
information in a manner different from that of said  
15 first transmission means.

10. An apparatus according to Claim 8, wherein  
said second transmission means transmits the additional  
information to a terminal different from a terminal to  
20 which the data was transmitted by said first  
transmission means.

11. An apparatus according to Claim 8, wherein a  
link to a location of the additional information is set  
25 in the data transmitted by said first transmission  
means.

12. An apparatus according to Claim 8, wherein a processed content based on the reply received by said reception means is further transmitted to the transmission destination.

5

13. A data communication method comprising:  
an input step of inputting image data;  
a storage step of storing the image data inputted in said input step, into a memory;

10 a mail transmission step of transmitting predetermined-format data concerning the image data inputted in said input step, as an electronic mail;  
a recognition step of recognizing an instruction from a transmission destination to which the electronic  
15 mail was transmitted in said mail transmission step;  
and

a transmission step of transmitting the image data stored into the memory in said storage step, in a method other than the electronic mail on the basis of  
20 contents of the instruction recognized in said recognition step.

14. A computer readable program stored in a storage medium, comprising:

25 an input step of inputting image data;  
a storage step of storing the image data inputted in said input step, into a memory;



a first transmission step of causing predetermined-format data concerning the image data inputted in said input step to be transmitted as an electronic mail;

5 a recognition step of recognizing an instruction from a transmission destination to which the electronic mail was transmitted in said first transmission step; and

10 a second transmission step of causing the image data stored into the memory in said storage step to be transmitted in a method other than the electronic mail on the basis of contents of the instruction recognized in said recognition step.

15 15. A data communication method comprising:

a first transmission step of transmitting data representing existence of additional information to a transmission destination;

20 a reception step of receiving a reply from the transmission destination for the data transmitted in said first transmission step; and

a second transmission step of transmitting the additional information on the basis of the reply received in said reception step.

25

16. A computer readable program stored in a storage medium, comprising:

a first transmission step of causing data representing existence of additional information to be transmitted to a transmission destination;

5 a reception step of receiving a reply from the transmission destination for the data transmitted in said first transmission step; and

a second transmission step of causing the additional information to be transmitted basis on the reply received in said reception step.

10

17. A data communication method comprising:

a recognition step of recognizing a received electronic mail;

15 a display step of displaying an image for display on the basis of a content recognized in said recognition step; and

20 an instruction step of instructing a transmission source of the electronic mail recognized in said recognition step, to transmit image data in a method other than the electronic mail so as to process the image displayed in said display step.

25 18. A method according to Claim 17, wherein in said instruction step it is instructed to print the image.

19. A method according to Claim 17, wherein in

said instruction step it is instructed to store the image data.

20. A computer readable program stored in a  
5 storage medium, comprising:

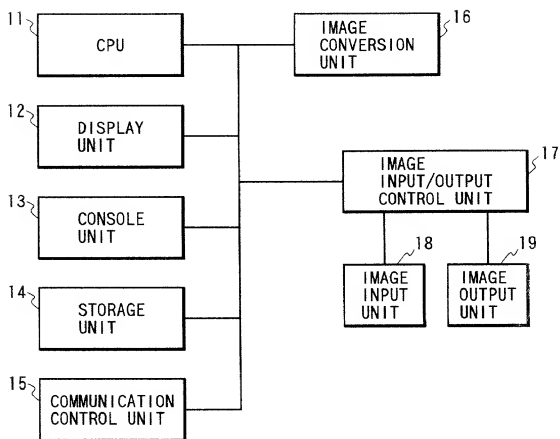
a recognition step of causing a received electronic mail to be recognized;

a display step of displaying an image for display  
on the basis of a content recognized in said  
10 recognition step; and

an instruction step of instructing a transmission  
source of the electronic mail recognized in said  
recognition step, to transmit image data in a method  
other than the electronic mail so as to process the  
15 image displayed in said display step.

ABSTRACT OF THE DISCLOSURE

An object of the invention is to reduce a load to a mail server by transmitting image data based on contents of an electronic mail, in a method other than the electronic mail. In order to achieve the object, there is provided a data communication apparatus comprising an input means for inputting the image data, a storage means for storing the inputted image data, a mail transmission means for transmitting predetermined-format data concerning the inputted image data, as the electronic mail, a recognition means for recognizing an instruction from a transmission destination to which the electronic mail was transmitted, and a transmission means for transmitting the stored image data, in the method other than the electronic mail on the basis of the contents of the instruction recognized by the recognition means.

*FIG. 1*

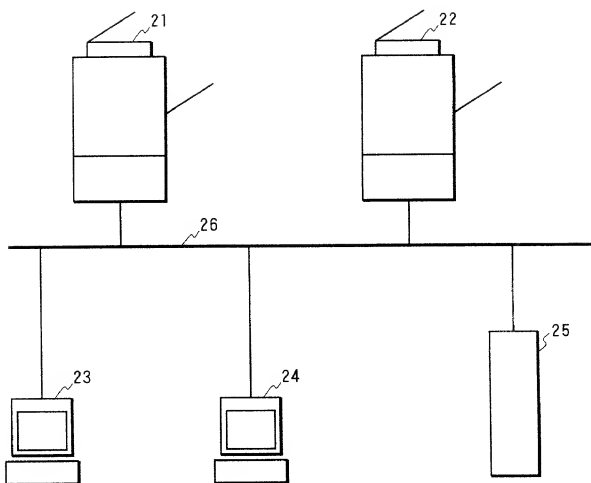
*FIG. 2*

FIG. 3

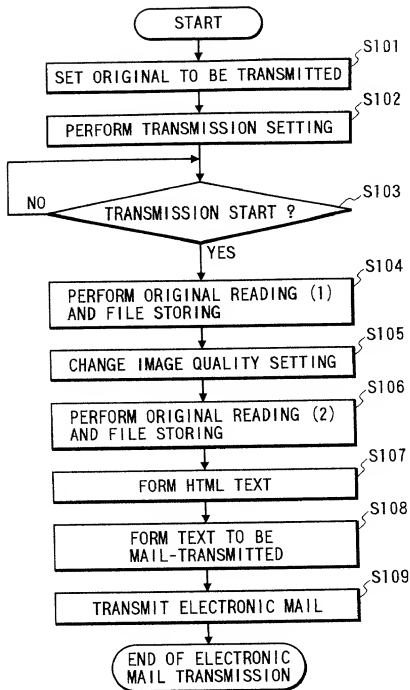


FIG. 4

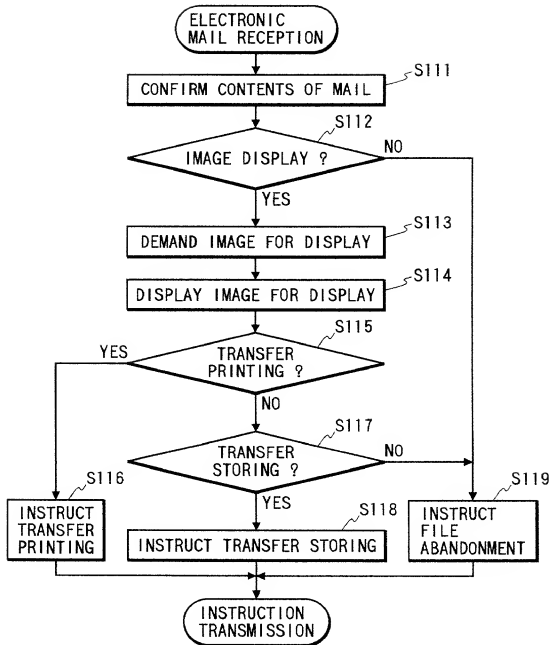
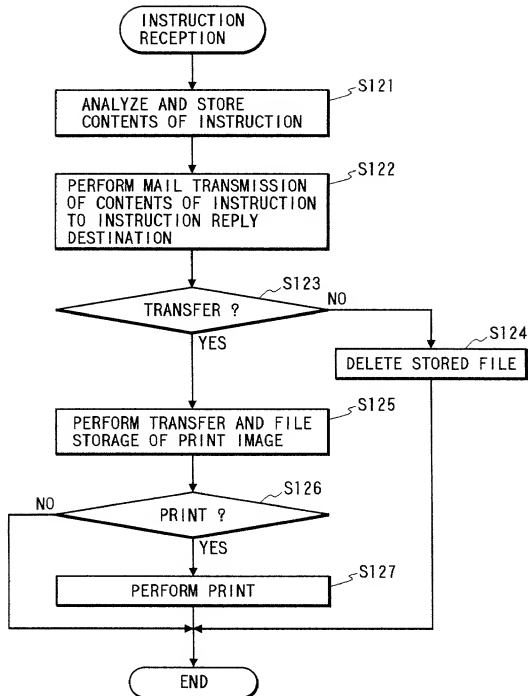




FIG. 5



COPY

Docket No. \_\_\_\_\_

COMBINED DECLARATION AND POWER OF ATTORNEY FOR  
ORIGINAL, DESIGN, NATIONAL STAGE OF PCT, SUPPLEMENTAL,  
DIVISIONAL, CONTINUATION OR CONTINUATION-IN-PART APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

DATA COMMUNICATION APPARATUS AND METHOD

the specification of which

- a. ☒ is attached hereto
- b. ☐ was filed on \_\_\_\_\_ as application Serial No. \_\_\_\_\_ and was amended on \_\_\_\_\_ (if applicable).

PCT FILED APPLICATION ENTERING NATIONAL STAGE

- c. ☐ was described and claimed in International Application No. \_\_\_\_\_ filed on \_\_\_\_\_ and as amended on \_\_\_\_\_ (if any).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, § 1.56(a).

I hereby specify the following as the correspondence address to which all communications about this application are to be directed:

SEND CORRESPONDENCE TO:

MORGAN & FINNEGAN, L.L.P.  
345 Park Avenue  
New York, N.Y. 10154

DIRECT TELEPHONE CALLS TO: Michael M. Murray  
(212) 758-4800

☒ I hereby claim foreign priority benefits under Title 35, United States Code § 119 (a)-(d) or under § 365(b) of any foreign application(s) for patent or inventor's certificate or under § 365(a) of any PCT international application(s) designating at least one country other than the U.S. listed below and also have identified below such foreign application(s) for patent or inventor's certificate or such PCT international application(s) filed by me on the same subject matter having a filing date within twelve (12) months before that of the application on which priority is claimed:

☐ The attached 35 U.S.C. § 119 claim for priority for the application(s) listed below forms a part of this declaration.

11012175

Docket No. \_\_\_\_\_

<u>Country/PCT</u>	<u>Application Number</u>	<u>Date of filing (day, month, yr)</u>	<u>Date of issue (day, month, yr)</u>	<u>Priority Claimed</u>
JAPAN	9-035129	19 February 1997		<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
				<input type="checkbox"/> YES <input type="checkbox"/> NO
				<input type="checkbox"/> YES <input type="checkbox"/> NO

☐ I hereby claim the benefit under 35 U.S.C. § 119(e) of any U.S. provisional application(s) listed below.

<u>Provisional Application No.</u>	<u>Date of filing (day, month, yr)</u>

**ADDITIONAL STATEMENTS FOR DIVISIONAL, CONTINUATION OR CONTINUATION-IN-PART OR PCT INTERNATIONAL APPLICATION(S) DESIGNATING THE U.S.)**

I hereby claim the benefit under Title 35, United States Code § 120 of any United States application(s) or under § 365(c) of any PCT international application(s) designating the U.S. listed below.

<u>US/PCT Application Serial No.</u>	<u>Filing Date,</u>	<u>Status (patented, pending, abandoned)/ U.S. application no. assigned (For PCT)</u>

<u>US/PCT Application Serial No.</u>	<u>Filing Date,</u>	<u>Status (patented, pending, abandoned)/ U.S. application no. assigned (For PCT)</u>

☐ In this continuation-in-part application, insofar as the subject matter of any of the claims of this application is not disclosed in the above listed prior United States or PCT international application(s) in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56(a) which occurred between the filing date of the prior application(s) and the national or PCT international filing date of this application.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or Imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

I hereby appoint the following attorneys and/or agents with full power of substitution and revocation, to prosecute this application, to receive the patent, and to transact all business in the Patent and Trademark Office connected therewith: John A. Diaz (Reg. No. 19,550), John C. Vassil (Reg. No. 19,098), Alfred P. Ewert (Reg. No. 19,887), David H. Pfeffer, P.C. (Reg. No. 19,825), Harry C. Marcus (Reg. No. 22,390), Robert E. Paulson (Reg. No. 21,046), Stephen R. Smith (Reg. No. 22,615), Kurt E. Richter (Reg. No. 24,052), J. Robert Dailey (Reg. No. 27,434), Eugene Moroz (Reg. No. 25,237), John F. Sweeney (Reg. No. 27,471), Arnold I. Rady (Reg. No. 26,601), Christopher A. Hughes (Reg. No. 26,914), William S. Feiler (Reg. No. 26,728),

01/22/98

Docket No. \_\_\_\_\_

Joseph A. Calvaruso (Reg. No. 28,287), James W. Gould (Reg. No. 28,859), Richard C. Komson (Reg. No. 27,913), Israel Blum (Reg. No. 26,710), Bartholomew Verdirame (Reg. No. 28,483), Maria C. H. Lin (Reg. No. 29,323), Joseph A. DeGirolamo (Reg. No. 28,595), Michael A. Nicodema (Reg. No. 33,199), Michael P. Dougherty (Reg. No. 32,730), Seth J. Atlas (Reg. No. 32,454), Andrew M. Riddles (Reg. No. 31,657), Bruce D. DeRenzi (Reg. No. 33,676), Michael M. Murray (Reg. No. 32,537) and Mark J. Abate (Reg. No. 32,527) of Morgan & Finnegan, L.L.P. whose address is: 345 Park Avenue, New York, New York 10154; and Edward A. Pennington (Reg. No. 32,588) of Morgan & Finnegan, L.L.P., whose address is: 1299 Pennsylvania Avenue, N.W., Suite 960, Washington, D.C. 20004.

[X] I hereby authorize the U.S. attorneys and/or agents named hereinabove to accept and follow instructions from \_\_\_\_\_ as to any action to be taken in the U.S. Patent and Trademark Office regarding this application without direct communication between the U.S. attorneys and/or agents and me. In the event of a change in the person(s) from whom instructions may be taken I will so notify the U.S. attorneys and/or agents named hereinabove.

Full name of sole or first inventor AKIHITO MOCHIZUKI

Inventor's signature\* Akihito Mochizuki

9-36, Tsudanuma 7-chome, Narashino-shi, date

February 12, 1998

Residence Chiba-ken, Japan

Citizenship Japan

c/o Canon Kabushiki Kaisha

Post Office Address 30-2, Shimomaruko 3-chome, Ohta-ku, Tokyo, Japan

Full name of second joint inventor, if any \_\_\_\_\_

Inventor's signature\* \_\_\_\_\_

date

Residence \_\_\_\_\_

Citizenship \_\_\_\_\_

Post Office Address \_\_\_\_\_

[ ] ATTACHED IS ADDED PAGE TO COMBINED DECLARATION AND POWER OF ATTORNEY FOR SIGNATURE BY THIRD AND SUBSEQUENT INVENTORS FORM.

\* Before signing this declaration, each person signing must:

1. Review the declaration and verify the correctness of all information therein; and
2. Review the specification and the claims, including any amendments made to the claims.

After the declaration is signed, the specification and claims are not to be altered.

Docket No. \_\_\_\_\_

To the inventor(s):

The following are cited in or pertinent to the declaration attached to the accompanying application:

Title 37, Code of Federal Regulation, §1.56

Duty to disclose information material to patentability

(a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclose information exists with respect to each pending claim until the claim is canceled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is canceled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim. The duty to disclose all information known to be material to patentability is deemed to be satisfied if all information known to be material to patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by §§1.97(b)-(d) and 1.98. However, no patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. The Office encourages applicants to carefully examine:

- (1) prior art cited in search reports of a foreign patent office in a counterpart application, and
- (2) the closest information over which individuals associated with the filing or prosecution of a patent application believe any pending claim patentably defines, to make sure that any material information contained therein is disclosed to the Office.

Title 35, U.S. Code § 101

Inventions patentable

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Title 35 U.S. Code § 102

Conditions for patentability; novelty and loss of right to patent

A person shall be entitled to a patent unless --

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent,
- (b) the invention was patented or described in a printed publication in this or foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States, or

- (c) he has abandoned the invention, or
- (d) the invention was first patented or caused to be patented, or was the subject of an inventor's certificate, by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application for patent or inventor's certificate filed more than twelve months before the filing of the application in the United States, or
- (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent, or
- (f) he did not himself invent the subject matter sought to be patented, or
- (g) before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it. In determining priority of invention there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other ...

Title 35, U.S. Code § 103

Conditions for patentability; non-obvious subject matter

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

Title 35, U.S. Code § 112 (in part)

Specification

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Title 35, U.S. Code, § 119

Benefit of earlier filing date in foreign country; right of priority

An application for patent for an invention filed in this country by any person who has, or whose legal representatives or assigns have, previously regularly filed an application for a patent for the same invention in a foreign country which affords similar privileges in the case of applications filed in the United States or to citizens of the United States, shall have the same effect as the same application would have if filed in this

1701-575

Docket No. \_\_\_\_\_

country on the date on which the application for patent for the same invention was first filed in such foreign country, if the application in this country is filed within twelve months from the earliest date on which such foreign application was filed; but no patent shall be granted on any application for patent for an invention which had been patented or described in a printed publication in any country more than one year before the date of the actual filing of the application in this country, or which had been in public use or on sale in this country more than one year prior to such filing.

Title 35, U.S. Code, § 120

Benefit or earlier filing date in the United States

An application for patent for an invention disclosed in the manner provided by the first paragraph of section 112 of this title in an application previously filed in the United States, or as provided by section 363 of this title, which is filed by an inventor or inventors named in the previously filed application shall have the same effect, as to such invention, as though filed on the date of the prior application, if filed before the patenting or abandonment of or termination of proceedings on the first application or an application similarly entitled to the benefit of the filing date of the first application and if it contains or is amended to contain a specific reference to the earlier filed application.

Please read carefully before signing the Declaration attached to the accompanying Application.

If you have any questions, please contact Morgan & Finnegan, L.L.P.

FORM: COMB-DEC.NY  
Rev. 1/22/98